10. A rate adaptive pacemaker comprising:

a measuring unit adapted for interaction with a patient for determining a demand;

a pacing rate controller connected to said measuring unit for controlling a pacing rate in response to said demand; and

a pacing rate limiter connected to said pacing rate controller, said pacing rate limiter having an upper limit setting unit for setting an upper limit value for said pacing rate, and an upper limit determining unit for determining a relation between energy supplied to the myocardium and energy consumed by the myocardium and for calculating said upper limit value for said pacing rate from said relation for supply to said upper limit setting unit, said pacing rate limiter upwardly limiting said pacing rate to always maintain said energy supplied to the myocardium to exceed said energy consumed by the myocardium.

11. A pacemaker as claimed in claim 12 wherein said pacing rate limiter limits said pacing rate to satisfy

$$(t_{diast.rest}/t_{diast}) \cdot (SV/SV_{rest}) < CR$$

wherein $t_{diast.rest}$ denotes a diastolic duration when said patient is at rest, t_{diast} denotes an actual diastolic duration for said patient, SV denotes an actual stroke volume for said patient, SV_{rest} denotes a stroke volume when said patient is at rest, and CR denotes coronary reserve.

12. A pacemaker as claimed in claim 11 wherein said measuring unit is a bioimpedance measuring unit which measures intercardiac bioimpedance as a function of time, and determines SV, SV_{rest}, $t_{syst\cdot rest}$ and t_{diast} therefrom.

13. A pacemaker as claimed in claim 11 wherein said measuring unit is an ECG measuring and analyzing unit which obtains an ECG from said patient and which determines SV, SV_{rest}, $t_{syst\cdot rest}$ and t_{diast} therefrom.

14. A pacemaker as claimed in claim 10 wherein said upper limit determining unit includes an energy determining unit which determines said energy supplied to the myocardium and said energy consumed by the myocardium, and a comparator which compares said energy supplied to the myocardium and said energy consumed by the myocardium to determine said relation.

15. A pacemaker as claimed in claim 14 wherein said energy determining unit determines said consumed energy as a product of an average value of ventricular pressure variations during a cardiac cycle, and stroke volume.

16. A pacemaker as claimed in claim 14 wherein said energy determining unit determines said supplied energy from a time response curve of arterial pressure during diastole.

17. A pacemaker as claimed in claim 10 wherein said upper limit determining unit determines an actual coronary resistance ratio from an equality between said supplied energy and said consumed energy, and determines said upper pacing rate limit value from a relation between said actual coronary resistance ratio and said coronary reserve.

18. A pacemaker as claimed in claim 10 wherein said upper limit determining unit determines said upper pacing rate-limit value as equal to $(60 \cdot CR)/[t_{diast.rest} \cdot)SV/SV_{rest}) + CR \cdot t_{syst}]$ wherein CR denotes coronary reserve, $t_{diast.rest}$ denotes a diastolic duration for said patient at rest, SV denotes an actual stroke volume, SV_{rest} denotes a stroke volume for said patient at rest, and T_{syst} denotes an actual scistolic duration.

19. A pacemaker as claimed in claim 18 wherein said measuring unit is a bioimpedance measuring unit which measures intercardiac bioimpedance as a function of time, and determines SV, SV_{rest}, $t_{diast.rest}$ and t_{syst} therefrom.